

EXHIBIT C

UNITED STATES DISCTRRICT COURT
WESTERN DISCTRRICT OF WASHINGTON AT SEATTLE

BOILERMAKERS NATIONAL ANNUITY TRUST
FUND, on behalf of itself and all others similarly
situated,

Plaintiff,

v.

WAMU MORTGAGE PASS-THROUGH
CERTIFICATES, SERIES AR7, *et al.*,

Defendants.

Case No.: C09-00037MJP

CLASS ACTION

**EXPERT REPORT OF PROFESSOR ANNE ZISSU, PH.D. IN RESPONSE TO
THE EXPERT REPORT OF CHRISTOPHER M. JAMES, PH.D.**

AUGUST 26, 2011

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I. SCOPE OF PROJECT AND REPORT

1. I was asked by Cohen Milstein Sellers & Toll PLLC and Scott + Scott LLP, co-lead counsel for the Plaintiffs, to examine, address, and analyze the Expert Report of Christopher M. James, Ph.D. (“Dr. James”, the “James Report”, or “James”) regarding Washington Mutual (“WaMu”) Mortgage Pass-Through Certificates, Series 2006-AR7 (“Series 2006-AR7”); WaMu Mortgage Pass-Through Certificates, Series 2006-AR12 (Series 2006-AR12”); WaMu Mortgage Pass-Through Certificates, Series 2006-AR16 (“Series 2006-AR16”); WaMu Mortgage Pass-Through Certificates, Series 2006-AR17 (“Series 2006-AR17”); WaMu Mortgage Pass-Through Certificates, Series 2006-AR18 (“Series 2006-AR18”); and, WaMu Mortgage Pass-Through Certificates, Series 2007-HY1 (“Series 2007-HY1”), herein after collectively referred to as the “WaMu NA-MBS”.
2. Toward these ends, I have read Dr. James’ Expert Report dated June 22, 2011, and certain other documents. Exhibit-1 lists the documents I reviewed and relied upon in the course of this engagement.
3. This report presents my findings and conclusions in response to the Expert Report furnished by Professor James. I may revise my report as additional information becomes available and as I conduct further analyses.
4. In accordance with professional ethics, my professional fees for this service are not contingent upon the opinions expressed herein. Plaintiffs are being charged fees for my services in this engagement based on my hourly billing rate of \$600 per hour. I received assistance from staff employed by RSA Group, Inc.

II. CREDENTIALS

5. My academic and professional experience is in Paragraph 7 and Exhibit-1 of my Expert Report In Support of Plaintiffs’ Motion for Class Certification, dated March 10, 2011 (“Zissu Expert Report”).

III. CONCLUSIONS

6. **The underwriting guidelines *within* each mortgage pool of the WaMu NA-MBS at issue are the same. The underwriting guidelines for the loan groups *within* any one of the six mortgage pools backing the respective WaMu NA-MBS at issue are also the same. These underwriting guidelines were set by the Sponsor at the mortgage pool-level. Professor James acknowledges this fact.¹** Professor James incorrectly asserts that underwriting guidelines differ by product type, and thus, by loan groups within the mortgage pool of an offering.² All the mortgage loans that comprise each of the six mortgage pools are of the same product type.³ The loan-level data from the six Prospectus Supplements shows that the collateral among constituent loan groups, within each of the six WaMu NA-MBS mortgage pools, is similar in key characteristics, as identified by the Fitch Ratings ResiLogic: U.S. Residential Mortgage Loss Model. (See Exhibits-2a, 2b, 2c, 2d, 2e, and 2f).
7. **Professor James attests to the thorough integration of the constituent loan groups within an offering.⁴** The credit enhancement mechanisms that interconnect the mortgage pools' constituent loan groups to its constituent tranches exemplify the mutual participation that investors in each of the six WaMu NA-MBS have on the respective mortgage pools. All investors in all constituent tranches of each of the six WaMu NA-MBS relied on a single mortgage pool that was issued according to a single Prospectus Supplement that disclosed information regarding the adherence to a uniform set of underwriting guidelines.⁵
8. **For purposes of assisting the court in its determination of Numerosity, I still believe that enumerating unique entities at the pool, or offering-level, is the correct way of proceeding at the class certification stage, based upon the pool-wide effects of the alleged misrepresentations found in each of the six Prospectus Supplements for each**

¹ The James Report, paragraph 15.

² The James Report, paragraphs 32 and 37.

³ See table on paragraph 13 and Footnotes No. 14 – 19.

⁴ The James Report, paragraph 20 and Exhibit 9.

⁵ See Zissu Expert Report, paragraphs 15, 26, and 27.

of the six WaMu NA-MBS. For the purpose of evaluating numerosity, Professor James is unable to disprove that each of the six WaMu NA-MBS is a single security at the *time of issuance*.

A mortgage backed security (MBS) is created by pooling mortgage loans and using this pool of mortgage loans as collateral for the security.
[Emphasis added.]

Fabozzi, Frank. 2006. *Fixed Income Mathematics; Analytical and Statistical Techniques*. Fourth Edition. United States of America: The McGraw-Hill Companies.

**IV. PROFESSOR JAMES ACKNOWLEDGES THE FACT THAT
 UNDERWRITING GUIDELINES ARE SET AT THE POOL-LEVEL FOR
 EACH OF THE SIX WAMU NA-MBS, BUT NEVERTHELESS REFUSES TO
 ACKNOWLEDGE THAT THE SAME UNDERWRITING STANDARDS
 APPLIED TO ALL LOAN GROUPS WITHIN EACH OF THE SIX
 OFFERINGS**

9. Professor James' theory that underwriting standards differ across an offering's constituent loan groups is wrong.⁶ My analysis shows that the collateral backing each of the constituent loan groups of the six WaMu NA-MBS is similar in key characteristics. The Prospectus Supplements for all of the WaMu NA-MBS at issue present a uniform set of underwriting guidelines for all the loan groups within the respective mortgage pools for the six offerings at issue.⁷ (See Exhibits-2a, 2b, 2c, 2d, 2e, and 2f).
10. The *pool* of collateralized mortgage loans is the fundamental component of a NA-MBS.⁸ Market participants, as well as the credit rating agencies, analyze and value NA-MBS at the pool-level given the 1) underwriting standards for the pool, 2) overall characteristics of the

⁶ The James Report, Exhibit 6 and 7.

⁷ See Zissu Expert Report, paragraphs 15, 26, and 27.

⁸ Fabozzi, Frank, Anand K. Bhattacharya, and William S. Berliner. 2007. *Mortgage-Backed Securities; Products, Structuring, and Analytical Techniques*. United States of America: John Wiley & Sons, Inc.

pool, and 3) the structure of the deal.⁹ All NA-MBS associated with a particular mortgage pool were issued in a single offering which only involved tranches of that mortgage pool.

The fundamental unit in the MBS market is the pool. At its lowest common denominator, mortgage-backed pools are aggregations of large number of mortgage loans with similar (but not identical) characteristics. **[Emphasis added.]**

Fabozzi, Frank, Anand K. Bhattacharya, and William S. Berliner. 2007.
Mortgage-Backed Securities; Products, Structuring, and Analytical Techniques. United States of America: John Wiley & Sons, Inc.

The James' Report factual description of the WaMu NA-MBS highlights the singular structure of each the six WaMu NA-MBS and how they were each brought to market as single 'deal' or securitization according to a single Prospectus Supplement:

The sponsor **sets underwriting standards for the pool of mortgages** (for example, minimum credit ("FICO") scores and LTV ratios) **as well as the overall characteristics of the pool** (for example, average FICO score, the proportion purchased from various originators, geographic diversification). Among other things, the sponsor is responsible for conducting due diligence of the originators, **structuring the deal**, and consulting with credit rating agencies (e.g., Standard and Poor's ("S&P"), Moody's, and/or Fitch) concerning the credit enhancement needed, given the characteristics of the mortgages in the pool. **[Emphasis added.]**

The James Report, paragraph 15.

11. The underwriting guidelines and standards for NA-MBS are uniform at the pool-level because market participants need to "ensure the consistent quality" of all the loans that back the constituent tranches, or mortgage pool, of each of the six WaMu NA-MBS.¹⁰

A sound process covers several critical steps. **To begin with, the loan underwriting criteria need to be uniform among different originators. This ensures that the quality of loans originated by different originators is consistent.** Then, the loan documents also need to be standardized to make the pooling process efficient. All originators must vigorously adhere to the underwriting standards to ensure the consistent quality of newly originated loans. **[Emphasis added.]**

Hu, Joseph C. 2011. *Asset Securitization; Theory and Practice*. Asia: John Wiley & Sons, Inc.

⁹ The James Report, paragraph 15.

¹⁰ Hu, Joseph C. 2011. *Asset Securitization; Theory and Practice*. Asia: John Wiley & Sons, Inc.

12. The Prospectus Supplements for each of the six WaMu NA-MBS confirms that even the loans that were underwritten by a “correspondent lender,” would have to “represent to the sponsor that the mortgage loans have been underwritten in accordance with the sponsor’s underwriting guidelines.”¹¹ Underwriting guidelines for each of the six mortgage pools were uniform, regardless of differences among a few loan-level characteristics among the collateral within each of the offerings’ constituent loan groups.
13. The James Report states that “[u]nderwriting standards differ based on loan products and programs.”¹² Professor James errs by *speculating* that underwriting standards differ at the loan group level. Exhibit 6 of the James Report shows a column labeled ‘Loan Group Differentiating Factor’, and the footnotes correctly acknowledge that different loan groups within an offering may comprise mortgage loans that use different indexes.¹³ However, the differentiating factors that Professor James singles out *are not factors that would require the reliance on a different set of underwriting guidelines*. Each of the six Prospectus Supplements defines the type of mortgage loan that comprises the mortgage pool. (See table below.)

Offering	Mortgage Loan Product Type*
Series 2006-AR7 ¹⁴	Option ARM
Series 2006-AR12 ¹⁵	Hybrid ARM

¹¹ Page S-24, Form 424B5 WaMu Mortgage Pass-Through Certificates, Series 2007-HY1, Prospectus Supplement, filed with the SEC on January 23, 2007.

¹² The James Report, paragraph 37.

¹³ The James Report, exhibit 6.

¹⁴ “... the depositor filed with the Securities and Exchange Commission, as Exhibits 99.7 and 99.8 to a Current Report on Form 8-K, static pool information about prior securitized pools of Option ARM Loans of the sponsor... “Option ARM Loans” are adjustable rate mortgage loans whose interest rates are tied to an index, which have an initial fixed-rate period of between one and twelve months, and which have a negative amortization feature.” Page S-38, Form 424B5 WaMu Mortgage Pass-Through Certificates, Series 2006-AR7, Prospectus Supplement, filed with the SEC on June 26, 2006.

¹⁵ “... the depositor filed with the Securities and Exchange Commission, as Exhibits 99.5 and 99.6 to a Current Report on Form 8-K, static pool information about prior securitized pools of adjustable-rate residential mortgage loans with initial fixed rate periods of various numbers of years of the sponsor... Page S-26-27, Form 424B5 WaMu Mortgage Pass-Through Certificates, Series 2006-AR12, Prospectus Supplement, filed with the SEC on September 25, 2006.

Series 2006-AR16 ¹⁶	Hybrid ARM
Series 2006-AR17 ¹⁷	Option ARM
Series 2006-AR18 ¹⁸	Hybrid ARM
Series 2007-HY1 ¹⁹	Hybrid ARM

*...Option ARM Loans (which are adjustable-rate mortgage loans whose interest rates are tied to an index, which have an initial fixed- rate period of between one and twelve months, and which have a negative amortization feature)

... Hybrid ARM Loan (which is an adjustable-rate mortgage loan whose interest rate is tied to an index and which has an initial fixed-rate period of five, seven or ten years)... **[Emphasis added.]**

Page S-27, Form 424B5 WaMu Mortgage Pass-Through Certificates, Series 2006-AR12, Prospectus Supplement, filed with the SEC on September 25, 2006.

14. The James Report infers that Series 2006-AR7 has different underwriting standards because its single Prospectus Supplement presents a general explanation of the pool's underwriting guidelines that discusses different standards for two different types of mortgages:

Underwriting standards differ based on loan products and programs. For example, the Prospectus Supplement for Series AR-7 (p. S-39) discusses differences in underwriting for pay option ARMs and hybrid ARMs[.]

The James Report, paragraph 37.

The Prospectus Supplement clearly states that Series 2006-AR7 is backed by one type of mortgage product: Option ARMs. Professor James acknowledges the difference that exists

¹⁶ See Page S-22, Form 424B5 WaMu Mortgage Pass-Through Certificates, Series 2006-AR16, Prospectus Supplement, filed with the SEC on November 17, 2006.

¹⁷ See also Page S-37, Form 424B5 WaMu Mortgage Pass-Through Certificates, Series 2006-AR17, Prospectus Supplement, filed with the SEC on November 20, 2006.

¹⁸ See also Page S-22, Form 424B5 WaMu Mortgage Pass-Through Certificates, Series 2006-AR18, Prospectus Supplement, filed with the SEC on December 19, 2006.

¹⁹ See also Page S-25, Form 424B5 WaMu Mortgage Pass-Through Certificates, Series 2007-HY1, Prospectus Supplement, filed with the SEC on January 23, 2007.

between Hybrid ARMs and Option ARMs, but ignores the fact that Series 2006-AR7 comprises a single type of mortgage collateral.²⁰

V. THE JAMES REPORT ATTESTS TO THE INTERCONNECTED STRUCTURE OF A NA-MBS, BUT FAILS TO ACKNOWLEDGE THAT UNDERWRITING DISCLOSURES PERTAINING TO EACH OF THE SIX WAMU NA-MBS THAT ARE PRESENTED IN THE PERTINENT PROSPECTUS SUPPLEMENTS ARE THE SAME

A. The James Report Attests to the Interconnected Structure between The Mortgage Pool and Loan Groups within an Offering

15. The James report acknowledges that mechanisms such as cross-collateralization “create[s] some interdependence between securities collateralized by a specific group of mortgages and those collateralized by another group.”²¹ The James Report accurately explains the necessity that all “cash flows from the underlying mortgages are allocated to the various tranches according to a prioritization mechanism known as a ‘waterfall’”.²² These cash flows, from varying mortgage loans of the same product type, are ultimately distributed to investors across the offering’s tranche hierarchy.
16. Professor James even presents an accurate graphical representation of Series 2006-AR7. (See Exhibit-9 of the James Report). Series 2006-AR7 has three loan groups that share the mortgage loans among one another due to a three-way cross collateralization mechanism that alleviates liquidity deficiencies among loan groups.²³ All investors in Series 2006-AR7 depended on all mortgages that comprise the mortgage pool.

²⁰ The James Report, paragraph 28; Page S-38, Form 424B5 WaMu Mortgage Pass-Through Certificates, Series 2006-AR7, Prospectus Supplement, filed with the SEC on June 26, 2006.

²¹ The James Report, paragraph 118.

²² The James Report, paragraph 17.

²³ See paragraph 35 and Exhibit-4a of the Zissu Expert Report in Support of Plaintiffs' Motion for Class Certification, dated March 10, 2011.

B. Professor James Fails to Acknowledge that Underwriting Disclosures are Presented in a Single Prospectus Supplement for each of the Six Mortgage Pools backing the WaMu NA-MBS

17. Underwriting disclosures differ according to transaction (offering), or “deal”²⁴, and its accompanying mortgage pool. Each of the six WaMu NA-MBS was offered to market participants according to a single Prospectus Supplement that presents the same underwriting disclosures for all of the NA-MBS’ constituent tranches. In other words, *every single market participant in each of the six WaMu NA-MBS relied on the same document to make investment decisions in any of its constituent tranches.*

The purpose of the prospectus is to disclose key material facts about an MBS that an investor needs in order to make an informed purchase decision.

Lukach, David M., Yogesh Gupta, Thomas Knox, John Gibson. 2006. “Understanding the Prospectus and Prospectus Supplement,” in *The Handbook of Mortgage-Backed Securities*. United States of America: Frank J. Fabozzi Associates.

CONCLUSION: FOR PURPOSES OF NUMEROUSITY, I STILL CONTEND THAT UNIQUE ENTITIES THAT INVESTED IN EACH OF THE SIX WAMU NA-MBS SHOULD TO BE ENUMERATED AT THE MORTGAGE POOL-LEVEL

18. In the context of securities litigation, especially section 11, I am placing material importance on how the NA-MBS was issued (brought to market). From the perspective of the security being structured and issued, the process was premised around a *single offering backed by a single pool of mortgage loans that were underwritten by uniform set of underwriting guidelines.*

19. I agree with Professor James in that each tranche carries its own CUSIP, and in that sense each can be considered a single security because it trades separately from the other tranches *within the offering*.²⁵ However, all of the tranches of a NA-MBS are issued *as a single offering*, or “deal”, as Professor James rightfully acknowledges (see paragraph 12):

²⁴ The James Report, paragraph 15.

²⁵ The James Report, paragraph 16.

Structuring refers to the process of segmenting the principal and interest cash flows from the pool of mortgages underlying a given offering into a set of securities with different cash flow characteristics.

The James Report, paragraph 15.

20. Each publicly offered tranche *within* an offering is not issued separately from the other publicly offered tranches. The structure of each NA-MBS allocates principal and interest from a single mortgage pool to all the constituent tranches *within* the offering. In that sense, each offering or NA-MBS can also be considered a single security:

A mortgage backed security (MBS) is created by pooling mortgage loans and using this pool of mortgage loans as collateral for the security. [Emphasis added.]

Fabozzi, Frank. 2006. *Fixed Income Mathematics; Analytical and Statistical Techniques.* Fourth Edition. United States of America: The McGraw-Hill Companies.

21. Tranches *within* any one of the six WaMu NA-MBS are tied to the single respective mortgage pool that provides principal and interest to all investors in that offering, as Professor James correctly acknowledges in his expert report:

Cash flows from the underlying mortgages are allocated to the various tranches according to a prioritization mechanism known as a “waterfall”.

The James Report, paragraph 15.

22. Tranches *within* any one of the six WaMu NA-MBS cannot exist independently without the structure of the entire offering that enables the allocation and distribution of principal and interest from the mortgage loans that comprise the mortgage pool of the respective offering:

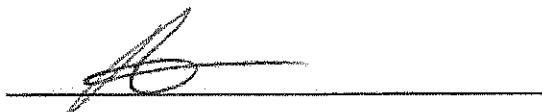
The cash flow of any MBS depends on the cash flow of the underlying mortgage pool. Since the single cash flow of an individual mortgage loan is uncertain because of the potential prepayments, the same is true for MBS. [Emphasis added.]

Fabozzi, Frank. 2006. *Fixed Income Mathematics; Analytical and Statistical Techniques.* Fourth Edition. United States of America: The McGraw-Hill Companies.

23. Each WaMu NA-MBS is a self-sustaining investment vehicle, whereas each individual tranche is not. In other words, a single tranche cannot be issued, and therefore traded, unless it is brought to market with the other publicly offered tranches that comprise any one offering or NA-MBS.
24. In my expert opinion, for *purposes of numerosity*, unique entities should be enumerated at the pool-level, same as the offering level, for several reasons. *First*, the underwriting guidelines and their pertinent disclosures were the same for all the loan groups within each of the WaMu NA-MBS at issue in these legal proceedings. There are no differences in underwriting standards at the tranche, or loan group level within an offering. *Second*, the collateral within loan groups of the same offering is the same, and each mortgage pool comprises the same type of mortgage product. *Third*, any disregard or non-adherence to underwriting guidelines would affect the mortgage pool in aggregate. *Fourth*, due to the interconnected structure between the mortgage pool and the tranche hierarchy within each offering, any disregard of underwriting guidelines affects the entire mortgage pool that backs the constituent tranches *within* that offering.

SIGNATURE

This rebuttal expert report regarding the six WaMu NA-MBS is furnished solely for the purpose of the court proceeding in the above named matter and may not be used or referred to for any other purpose. The analysis and opinions contained in this report are based on information available as of the date of this report. I reserve the right to supplement or amend this report, including in the event additional information becomes available.



Anne Zissu, Ph.D.

Exhibit-1

Documents and Other Information Reviewed and Relied Upon

LEGAL DOCUMENTS

- MTD Order, 2010 U.S. Dist. LEXIS 104427
- Expert Report of Christopher M. James, Ph.D., *In re Washington Mutual Mortgage-Backed Securities Litigation*, United States District Court, Western District of Washington, Master Case No. C09-037 MJP, filed on June 22, 2011.
- New Orleans Employees' Retirement System and Marta/ATU Local 732 Employees Retirement Plan, Individually and on Behalf of All Others Similarly Situated, Complaint For Violations of Sections 11,12 (A)(2) And 15 of the Securities Act of 1933, dated August 04, 2008.
- New Orleans Employees' Retirement System and Marta/ATU Local 732 Employees Retirement Plan, Individually and on Behalf of all Others Similarly Situated, First Amended complaint For Violations of Sections 11,12(A)(2) And 15 of the Securities Act of 1933, dated December 16, 2008.
- Boilermakers National Annuity Trust Fund, on Behalf of Itself and All Others Similarly Situated, Complaint for Violation of Section 11, 12 And 15 of The Securities Act of 1933, dated January 12, 2009.
- Boilermakers National Annuity Trust Fund, on Behalf of Itself and All Others Similarly Situated, Consolidated Class Action Complaint, dated November 23, 2009.
- Boilermakers National Annuity Trust Fund, on Behalf of Itself and All Others Similarly Situated, Amended Consolidated Class Action Complaint, dated December 31, 2009.

SEC FILINGS

- WaMu Mortgage Pass-Through Certificates, Form 424B5 (File No. 333-130795-17: 06924003), filed with the SEC on June 26, 2006.
- WaMu Mortgage Pass-Through Certificates, Form 424B5 (File No. 333-130795-28: 061107213), filed with the SEC on September 25, 2006.

- WaMu Mortgage Pass-Through Certificates, Form 424B5 (File No. 333-130795-38: 061226443), filed with the SEC on November 17, 2006.
- WaMu Mortgage Pass-Through Certificates, Form 424B5 (File No. 333-130795-39: 061229744), filed with the SEC on November 20, 2006.
- WaMu Mortgage Pass-Through Certificates, Form 424B5 (File No. 333-130795-41: 061286396), filed with the SEC on December 19, 2006.
- WaMu Mortgage Pass-Through Certificates, Form 424B5 (File No. 333-130795-46: 07545488), filed with the SEC on January 23, 2007.

ACADEMIC LITERATURE

- Ammer, John and Nathanael Clinton, July 2004. "Good News is No News? The Impact of Credit Rating Changes on the Pricing of Asset-Backed Securities", Board of Governors of the Federal Reserve System, Int'l Finance Discussion Papers, Number 809.
- Fabozzi, Frank J., Anand K. Bhattacharya, and William S. Berliner. Mortgage-Backed Securities; Products, Structuring, and Analytical Techniques. 2007. United States of America: John Wiley & Sons, Inc.
- FitchRatings, ResiLogic: U.S. Residential Mortgage Loss Model Technical Document, dated January 18, 2007.
- Hu, Joseph C. 2011. Asset Securitization; Theory and Practice. Asia: John Wiley & Sons, Inc.
- Incorporating Third-Party Due Diligence Results Into the U.S. RMBS Rating Process, Standard & Poors RatingsDirect Report, November 25, 2008.
- Lukach, David M., Yogesh Gupta, Thomas Knox, John Gibson. 2006. "Understanding the Prospectus and Prospectus Supplement," in The Handbook of Mortgage-Backed Securities. United States of America: Frank J. Fabozzi Associates.
- Mason, Joseph R. and Rosner, Josh, Where Did the Risk Go? How Misapplied Bond Ratings Cause Mortgage Backed Securities and Collateralized Debt Obligation Market Disruptions, dated May 3, 2007.
- Mann, Steve and Richard S. Wilson. 2005. "Corporate Bonds," in The Handbook of Fixed Income Securities. United States of America: The McGraw-Hill Companies, Inc.

- Methodology: Rating U.S. Residential Mortgage-Backed Security Transactions, DBRS. April 2009.

DATA

- BLOOMBERG, Interactive Data Pricing and Reference Data, Inc.

Exhibit-2a

Table 1: Loan Characteristics Accounting for 97% of the Predictive Power in Fitch's U.S. Residential Mortgage Frequency of Foreclosure Model are Very Similar Across the 2006-AR7 Loan Groups

Rank	Variable	% of Model "Power"	Group 1	Group 2	Group 3
1	FICO (Credit Score)	80.1%	725	729	742
2	Credit Sector ² Washington Mutual Bank Underwriting Guidelines	9.5%	100.00%	100.00%	100.00%
3	CLTV CLTV ³	3.5%	84.80%	85.50%	82.50%
4	Property Type Single Family Planned Unit Development Condominium Duplex Fourplex Triplex Housing Cooperative Townhouse	1.8%	64.62% 20.50% 10.46% 3.79% 0.46% 0.16%	66.02% 20.57% 9.65% 2.35% 0.41% 0.22%	70.78% 19.40% 7.51% 1.75% 0.55% 0.50%
5	Product Type ⁴ Adjustable Rate	1.4%	100.00%	100.00%	100.00%
6	Documentation Type Full Documentation Reduced Documentation	1.1%	16.64% 83.36%	12.25% 87.75%	13.56% 86.44%
Total % of Model "Power"					
97.4%					

**Table 2: Weighting Each Loan Characteristic By the % of Model "Power"
Does Not Show Any Meaningful Differences Between Loan Groups**

Rank	Variable	% of Model "Power"	Group 1	Group 2	Group 3
1	FICO (Credit Score)	80.1%	581	584	594
2	Credit Sector ² Washington Mutual Bank Underwriting Guidelines	9.5%	9.50%	9.50%	9.50%
3	CLTV CLTV ³	3.5%	2.97%	2.99%	2.89%
4	Property Type Single Family Planned Unit Development Condominium Duplex Fourplex Triplex Housing Cooperative Townhouse	1.8%	1.16% 0.37% 0.19% 0.07% 0.01% 0.00% 0.00%	1.19% 0.38% 0.17% 0.04% 0.01% 0.00% 0.01%	1.27% 0.35% 0.14% 0.03% 0.01% 0.00% 0.00%
5	Product Type ⁴ Adjustable Rate	1.4%	1.40%	1.40%	1.40%
6	Documentation Type Full Documentation Reduced Documentation	1.1%	0.18% 0.92%	0.13% 0.97%	0.15% 0.95%
Total % of Model "Power"					
97.4%					

Notes:

1. Percentages are weighted averages based on the total stated principal balance of each of the respective loan groups.
2. Credit Sector is defined as underwriting guidelines used to originate loan. All loans were underwritten using Washington Mutual Bank Underwriting Guidelines.
3. Combined loan to values (CLTVs) are the weighted average combined loan-to-value ratio of the first and second liens of the loan group (exclusive of no second lien).
4. Product type is defined as loan product (Fixed Rate Mortgage, 2 year Fixed/28 year Variable Hybrid Adjustable Rate Mortgage, 5 year Fixed Rate/25 Year Variable Rate Interest Only Adjustable Rate Mortgage) including adjustment period and Interest Only feature.
5. The variables are presented in descending order of importance in terms of their contribution to the predictive power of the frequency of foreclosure model. Other variables in the model not listed in tables each account for less than 1% of the predictive power of the model.

Sources:

1. Fitch Ratings. ResiLogic: U.S. Residential Mortgage Loss Model Technical Document. January 18, 2007.
2. Pages S-5, S-38, S-125 to S-141, WaMu Mortgage Pass-Through Certificates, Form 424B5, filed with the SEC on June 26, 2006. (Prospectus Supplement to Series 2006-AR7).

Exhibit-2b

Table 1: Loan Characteristics Accounting for 97% of the Predictive Power in Fitch's U.S. Residential Mortgage Frequency of Foreclosure Model are Very Similar Across the 2006-AR12 Loan Groups

Rank	Variable	% of Model "Power"	Group 1	Group 2	Group 3
1	FICO (Credit Score)	80.1%	730	740	737
2	Credit Sector ² Washington Mutual Bank Underwriting Guidelines	9.5%	100.00%	100.00%	100.00%
3	CLTV ³	3.5%	81.12%	81.66%	79.95%
4	Property Type Single Family Planned Unit Development Condominium Duplex Fourplex Triplex Housing Cooperative Townhouse	1.8%	69.08% 18.84% 10.01% 1.29%	68.28% 21.02% 7.97% 1.47%	68.86% 22.55% 7.16% 0.83% 0.60%
5	Product Type ⁴ Adjustable Rate	1.4%	100.00%	100.00%	100.00%
6	Documentation Type Full Documentation Reduced Documentation	1.1%	13.98% 86.02%	16.23% 83.77%	17.22% 82.78%

Total % of Model "Power" 97.4%

**Table 2: Weighting Each Loan Characteristic By the % of Model "Power"
Does Not Show Any Meaningful Differences Between Loan Groups**

Rank	Variable	% of Model "Power"	Group 1	Group 2	Group 3
1	FICO (Credit Score)	80.1%	585	593	590
2	Credit Sector ² Washington Mutual Bank Underwriting Guidelines	9.5%	9.50%	9.50%	9.50%
3	CLTV ³	3.5%	2.84%	2.86%	2.80%
4	Property Type Single Family Planned Unit Development Condominium Duplex Fourplex Triplex Housing Cooperative Townhouse	1.8%	1.24% 0.34% 0.18% 0.02% 0.00% 0.00% 0.01%	1.23% 0.38% 0.14% 0.03% 0.00% 0.00% 0.02%	1.24% 0.41% 0.13% 0.01% 0.00% 0.01% 0.00%
5	Product Type ⁴ Adjustable Rate	1.4%	1.40%	1.40%	1.40%
6	Documentation Type Full Documentation Reduced Documentation	1.1%	0.15% 0.95%	0.18% 0.92%	0.19% 0.91%

Total % of Model "Power" 97.4%

Notes:

- Percentages are weighted averages based on the total stated principal balance of each of the respective loan groups.
- Credit Sector is defined as underwriting guidelines used to originate loan. All loans were underwritten using Washington Mutual Bank Underwriting Guidelines.
- Combined loan to values (CLTV's) are the weighted average combined loan-to-value ratio of the first and second liens of the loan group (exclusive of no second lien).
- Product type is defined as loan product (Fixed Rate Mortgage, 2 year Fixed/28 year Variable Hybrid Adjustable Rate Mortgage, 5 year Fixed Rate/25 Year Variable Rate Interest Only Adjustable Rate Mortgage) including adjustment period and interest Only feature.
- The variables are presented in descending order of importance in terms of their contribution to the predictive power of the frequency of foreclosure model. Other variables in the model not listed in tables each account for less than 1% of the predictive power of the model.

Sources:

- Fitch Ratings, ResiLogic: U.S. Residential Mortgage Loss Model Technical Document, January 18, 2007.
- Pages S-5, S-26, S-98 to S-113, WaMu Mortgage Pass-Through Certificates, Form 424B5, filed with the SEC on September 25, 2006. (Prospectus Supplement to Series 2006-AR12).

Exhibit-2c

Table 1: Loan Characteristics Accounting for 97% of the Predictive Power in Fitch's U.S. Residential Mortgage Frequency of Foreclosure Model are Very Similar Across the 2006-AR16 Loan Groups

Rank	Variable	% of Model "Power"	Group 1	Group 2	Group 3
1	FICO (Credit Score)	80.1%	733	736	740
2	Credit Sector ² Washington Mutual Bank Underwriting Guidelines	9.5%	100.00%	100.00%	100.00%
3	CLTV ³	3.5%	78.20%	78.60%	78.00%
4	Property Type Single Family Planned Unit Development Condominium Duplex Fourplex Triplex Housing Cooperative Townhouse	1.8%	69.58% 20.76% 5.82% 3.28%	69.55% 19.00% 10.35% 1.32%	74.84% 16.13% 7.16% 1.19%
5	Product Type ⁴ Adjustable Rate	1.4%	100.00%	100.00%	100.00%
6	Documentation Type Full Documentation Reduced Documentation	1.1%	8.88% 91.12%	14.56% 85.44%	13.40% 86.60%
Total % of Model "Power"					
97.4%					

Table 2: Weighting Each Loan Characteristic By the % of Model "Power"
Does Not Show Any Meaningful Differences Between Loan Groups

Rank	Variable	% of Model "Power"	Group 1	Group 2	Group 3
1	FICO (Credit Score)	80.1%	587	590	593
2	Credit Sector ² Washington Mutual Bank Underwriting Guidelines	9.5%	9.50%	9.50%	9.50%
3	CLTV ³	3.5%	2.74%	2.75%	2.73%
4	Property Type Single Family Planned Unit Development Condominium Duplex Fourplex Triplex Housing Cooperative Townhouse	1.8%	1.25% 0.37% 0.10% 0.06% 0.00% 0.00% 0.01% 0.00%	1.23% 0.34% 0.19% 0.02% 0.00% 0.01% 0.00% 0.01%	1.35% 0.29% 0.13% 0.02% 0.00% 0.00% 0.00% 0.00%
5	Product Type ⁴ Adjustable Rate	1.4%	1.40%	1.40%	1.40%
6	Documentation Type Full Documentation Reduced Documentation	1.1%	0.10% 1.00%	0.16% 0.94%	0.15% 0.95%
Total % of Model "Power"					
97.4%					

Notes:

- Percentages are weighted averages based on the total stated principal balance of each of the respective loan groups.
- Credit Sector is defined as underwriting guidelines used to originate loan. All loans were underwritten using Washington Mutual Bank Underwriting Guidelines.
- Combined loan to values (CLTVs) are the weighted average combined loan-to-value ratio of the first and second liens of the loan group (exclusive of no second lien)
- Product type is defined as loan product (Fixed Rate Mortgage, 2 year Fixed/28 year Variable Hybrid Adjustable Rate Mortgage, 5 year Fixed Rate/25 Year Variable Rate Interest Only Adjustable Rate Mortgage) including adjustment period and interest only feature.
- The variables are presented in descending order of importance in terms of their contribution to the predictive power of the frequency of foreclosure model. Other variables in the model not listed in tables each account for less than 1% of the predictive power of the model.

Sources:

- Fitch Ratings, ResiLogic: U.S. Residential Mortgage Loss Model Technical Document, January 18, 2007.
- Pages S-5, S-22, S-85 to S-97, WaMu Mortgage Pass-Through Certificates, Form 424B5, filed with the SEC on November 17, 2006. (Prospectus Supplement to Series 2006-AR16).

Exhibit-2d**Table 1: Loan Characteristics Accounting for 97% of the Predictive Power in Fitch's U.S. Residential Mortgage Frequency of Foreclosure Model are Very Similar Across the 2006-AR17 Loan Groups**

Rank	Variable	% of Model "Power"	Group 1	Group 2
1	FICO (Credit Score)	30.1%	734	742
2	Credit Sector ² Washington Mutual Bank Underwriting Guidelines	9.5%	100.00%	100.00%
3	CLTV	3.5%		
4	CLTV ³ Property Type Single Family Planned Unit Development Condominium Duplex Fourplex Triplex Housing Cooperative Townhouse	1.8%	83.32%	82.50%
			66.03%	69.82%
			19.91%	16.28%
			10.02%	8.35%
			3.01%	2.84%
			0.54%	2.07%
			0.24%	0.63%
			0.25%	
5	Product Type ⁴ Adjustable Rate	1.4%	100.00%	100.00%
6	Documentation Type Full Documentation Reduced Documentation	1.1%	8.17%	6.47%
			91.83%	93.53%
Total % of Model "Power"				
97.4%				

Table 2: Weighting Each Loan Characteristic By the % of Model "Power" Does Not Show Any Meaningful Differences Between Loan Groups

Rank	Variable	% of Model "Power"	Group 1	Group 2
1	FICO (Credit Score)	30.1%	588	594
2	Credit Sector ² Washington Mutual Bank Underwriting Guidelines	9.5%	9.50%	9.50%
3	CLTV	3.5%		
4	CLTV ³ Property Type Single Family Planned Unit Development Condominium Duplex Fourplex Triplex Housing Cooperative Townhouse	1.8%	2.92%	2.89%
			1.19%	1.26%
			0.36%	0.29%
			0.18%	0.15%
			0.05%	0.05%
			0.01%	0.04%
			0.00%	0.01%
			0.00%	0.00%
			0.00%	0.00%
5	Product Type ⁴ Adjustable Rate	1.4%	1.40%	1.40%
6	Documentation Type Full Documentation Reduced Documentation	1.1%	0.09%	0.07%
			1.01%	1.03%
Total % of Model "Power"				
97.4%				

Notes:

1. Percentages are weighted averages based on the total stated principal balance of each of the respective loan groups.
2. Credit Sector is defined as underwriting guidelines used to originate loan. All loans were underwritten using Washington Mutual Bank Underwriting Guidelines.
3. Combined loan to values (CLTVs) are the weighted average combined loan-to-value ratio of the first and second liens of the loan group (exclusive of no second lien).
4. Product type is defined as loan product (Fixed Rate Mortgage, 2 year Fixed/28 year Variable Hybrid Adjustable Rate Mortgage, 5 year Fixed Rate/25 Year Variable Rate Interest Only Adjustable Rate Mortgage including adjustment period and Interest Only feature).
5. The variables are presented in descending order of importance in terms of their contribution to the predictive power of the frequency of foreclosure model. Other variables in the model not listed in tables each for less than 1% of the predictive power of the model.

Sources:

1. Fitch Ratings, ResiLogic: U.S. Residential Mortgage Loss Model Technical Document, January 18, 2007.
2. Pages S-5, S-37, S-117 to S-128, WaMu Mortgage Pass-Through Certificates, Form 424B5, filed with the SEC on November 20, 2006. (Prospectus Supplement to Series 2006-AR17).

Exhibit-2e

Table 1: Loan Characteristics Accounting for 97% of the Predictive Power in Fitch's U.S. Residential Mortgage Frequency of Foreclosure Model are Very Similar Across the 2006-AR18 Loan Groups

Rank	Variable	% of Model "Power"	Group 1	Group 2	Group 3
1	FICO (Credit Score)	80.1%	730	735	743
2	Credit Sector ² Washington Mutual Bank Underwriting Guidelines	9.5%	100.00%	100.00%	100.00%
3	CLTV ³	3.5%	72.20%	69.40%	69.90%
4	Property Type Single Family Planned Unit Development Condominium Duplex Fourplex Triplex Housing Cooperative Townhouse	1.8%	69.45% 20.55% 8.09% 1.40% 0.53%	67.63% 23.77% 7.50% 0.97% 0.14%	73.32% 18.23% 6.09% 1.48% 0.87%
5	Product Type ⁴ Adjustable Rate	1.4%	100.00%	100.00%	100.00%
6	Documentation Type Full Documentation Reduced Documentation	1.1%	8.77% 91.23%	12.13% 87.87%	14.76% 85.24%

Total % of Model "Power": 97.4%

**Table 2: Weighting Each Loan Characteristic By the % of Model "Power"
Does Not Show Any Meaningful Differences Between Loan Groups**

Rank	Variable	% of Model "Power"	Group 1	Group 2	Group 3
1	FICO (Credit Score)	80.1%	585	589	595
2	Credit Sector ² Washington Mutual Bank Underwriting Guidelines	9.5%	9.50%	9.50%	9.50%
3	CLTV ³	3.5%	2.53%	2.43%	2.45%
4	Property Type Single Family Planned Unit Development Condominium Duplex Fourplex Triplex Housing Cooperative Townhouse	1.8%	1.25% 0.37% 0.15% 0.03% 0.00% 0.00% 0.01% 0.00%	1.22% 0.43% 0.14% 0.02% 0.00% 0.00% 0.00% 0.00%	1.32% 0.33% 0.11% 0.03% 0.00% 0.00% 0.02% 0.00%
5	Product Type ⁴ Adjustable Rate	1.4%	1.40%	1.40%	1.40%
6	Documentation Type Full Documentation Reduced Documentation	1.1%	0.10% 1.00%	0.13% 0.97%	0.16% 0.94%

Total % of Model "Power": 97.4%

Notes:

1. Percentages are weighted averages based on the total stated principal balance of each of the respective loan groups.
2. Credit Sector is defined as underwriting guidelines used to originate loan. All loans were underwritten using Washington Mutual Bank Underwriting Guidelines.
3. Combined loan to values (CLTVs) are the weighted average combined loan-to-value ratios of the first and second liens of the loan group (exclusive of the second lien).
4. Product type is defined as loan product (Fixed Rate Mortgage, 2 year Fixed/28 year Variable Hybrid Adjustable Rate Mortgage, 5 year Fixed Rate/25 Year Variable Rate Interest Only Adjustable Rate Mortgage) including adjustment period and interest only feature.
5. The variables are presented in descending order of importance in terms of their contribution to the predictive power of the frequency of foreclosure model. Other variables in the model not listed in tables each account for less than 1% of the predictive power of the model.

Sources:

1. Fitch Ratings, ResiLogic: U.S. Residential Mortgage Loss Model Technical Document, January 18, 2007.
2. Pages S-5, S-22, S-85 to S-98, WaMu Mortgage Pass-Through Certificates, Form 424B5, filed with the SEC on December 19, 2006. (Prospectus Supplement to Series 2006-AR18).

Exhibit-2f

Table 1: Loan Characteristics Accounting for 97% of the Predictive Power in Fitch's U.S. Residential Mortgage Frequency of Foreclosure Model are Very Similar Across the 2007-HY1 Loan Groups

Rank	Variable	% of Model "Power"	Group 1	Group 2	Group 3	Group 4	Group 5
1	FICO (Credit Score)	80.1%					
2	Credit Sector ²	9.3%					
3	Washington Mutual Bank Underwriting Guidelines		100.00%	100.00%	100.00%	100.00%	100.00%
4	CLTV ³	3.5%					
5	CLTV ⁴		71.40%	70.40%	67.40%	73.70%	75.90%
6	Property Type	1.8%					
	Single Family		64.98%	66.93%	69.03%	65.01%	63.73%
	Planned Unit Development		21.57%	23.54%	20.30%	22.64%	23.94%
	Condominium		10.63%	7.46%	8.32%	10.55%	10.45%
	Duplex		2.09%	1.79%	1.53%	0.95%	1.26%
	Fourplex					0.14%	
	Tripleplex						
	Housing Cooperative			0.21%			
	Townhouse			0.06%	0.03%	0.33%	0.15%
					0.15%	0.17%	0.47%
7	Product Type ⁵	1.4%					
8	Adjustable Rate		100.00%	100.00%	100.00%	100.00%	100.00%
9	Documentation Type	1.1%					
	Full Documentation		9.72%	9.85%	14.48%	6.74%	5.72%
	Reduced Documentation		90.28%	90.15%	85.52%	93.26%	94.28%
Total % of Model "Power"							
97.4%							

Table 2: Weighting Each Loan Characteristic By the % of Model "Power"
Does Not Show Any Meaningful Differences Between Loan Groups

Rank	Variable	% of Model "Power"	Group 1	Group 2	Group 3	Group 4	Group 5
1	FICO (Credit Score)	80.1%					
2	Credit Sector ²	9.3%					
3	Washington Mutual Bank Underwriting Guidelines		9.50%	9.50%	9.50%	9.50%	9.50%
4	CLTV ³	3.5%					
5	CLTV ⁴		2.90%	2.46%	2.36%	2.58%	2.66%
6	Property Type	1.8%					
	Single Family		1.17%	1.20%	1.24%	1.17%	1.15%
	Planned Unit Development		0.39%	0.42%	0.37%	0.41%	0.43%
	Condominium		0.19%	0.13%	0.15%	0.19%	0.19%
	Duplex		0.04%	0.13%	0.03%	0.02%	0.02%
	Fourplex		0.00%	0.00%	0.00%	0.00%	0.00%
	Tripleplex		0.00%	0.00%	0.00%	0.00%	0.00%
	Housing Cooperative		0.01%	0.00%	0.01%	0.01%	0.00%
	Townhouse		0.00%	0.00%	0.00%	0.00%	0.01%
7	Product Type ⁵	1.4%					
8	Adjustable Rate		1.40%	1.40%	1.40%	1.40%	1.40%
9	Documentation Type	1.1%					
	Full Documentation		0.11%	0.11%	0.16%	0.07%	0.06%
	Reduced Documentation		0.99%	0.99%	0.04%	1.03%	1.04%
Total % of Model "Power"							
97.4%							

Notes:

- Percentages are weighted averages based on the total stated principal balance of each of the respective loan groups.
- Credit Sector is defined as underwriting guidelines used to originate loan. All loans were underwritten using Washington Mutual Bank Underwriting Guidelines.
- Combined loan to value (CLTV's) are the weighted average combined loan-to-value ratios of the first and second loans of the loan group (exclusive of no second loan).
- Product type is defined as loan product (Fixed Rate Mortgage, 2 year Fixed/25 year Variable Hybrid Adjustable Rate Mortgage, 5 year Fixed Rate/25 Year Variable Rate Interest Only Adjustable Rate Mortgage) including adjustment period and interest Only feature.
- The variables are presented in descending order of importance in terms of their contribution to the predictive power of the frequency of foreclosure model. Other variables in the model not listed in tables each account for less than 1% of the predictive power of the model.

Sources:

- Fitch Ratings, Residential U.S. Residential Mortgage Loss Model Technical Document, January 18, 2007.
- Pages S-5, S-25, S-104 to S-125, ValMu Mortgage Pass-Through Certificates, Form 424B5, filed with the SEC on January 23, 2007, (Prospectus Supplement to Series 2007-HY).